

## INTERNATIONAL SEARCH REPORT

International application No,  
PCT/AU2004/001093

## A. CLASSIFICATION OF SUBJECT MATTER

Int. Cl. 7: D21C 3/04

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

DWPI: D21C 3/- &amp; Keywords: imidazolium, triazolium, pyrazolium, pyridinium, pyrrolidinium, piperidinium, phosphonium, ammonium, sulphonium

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	EP 957198 A (DOW CORNING CORPORATION) 17 November 1999 Whole document	1-44
X	US 2003/0041982 A (PRIOR) 6 March 2003 Whole document	1-8, 17-35
X	US 5385641 A (BERG ET AL) 31 January 1995 Whole document	1-8, 19, 21,- 26, 28-35
X	US 4652341 A (PRIOR) 24 March 1987 Whole document	1-7, 18-35

☒ Further documents are listed in the continuation of Box C☒ See patent family annex

* Special categories of cited documents:	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"A" document defining the general state of the art which is not considered to be of particular relevance	"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"E" earlier application or patent but published on or after the international filing date	"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"&" document member of the same patent family
"O" document referring to an oral disclosure, use, exhibition or other means	
"P" document published prior to the international filing date but later than the priority date claimed	

Date of the actual completion of the international search  
14 September 2004Date of mailing of the international search report  
7 NOV 2004Name and mailing address of the ISA/AU  
AUSTRALIAN PATENT OFFICE  
PO BOX 200, WODEN ACT 2606, AUSTRALIA  
E-mail address: pct@ipaustalia.gov.au  
Facsimile No. (02) 6285 3929Authorized officer  
  
GEORGE CARTER  
Telephone No : (02) 6283 2154

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C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 1990/011401 A (EXXON CHEMICAL PATENTS, INC) 4 October 1990 Whole document	1, 9-15, 17-44
X	GB 2076034 A (NATURAL FIBRES (UK) LIMITED) 25 November 1981 Whole document	1-7, 15, 18-35
X	US 6139683 A (NIMZ ET AL) 31 October 2000 Whole document	1-8, 19-35

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**Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)**

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:  
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☒ Claims Nos.: 45, 53  
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:  
It is not economically feasible to search these 2 independent claims given their breadth of scope.
3. ☐ Claims Nos.:  
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a)

**Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)**

This International Searching Authority found multiple inventions in this international application, as follows:

1. Claims 1-44. The first invention is directed to a method of treatment of a lignin-containing material with an ionic liquid, and this comprises a first "special technical feature".
2. Claims 45-57. Claim 45 is a composition claim directed to an ionic liquid comprising a substituted or unsubstituted aryl organic acid anion and an organic or inorganic cation. While claim 53 is directed to an ionic liquids comprising certain cations. Therefore the second "special technical feature" comprises the organic or inorganic cation

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.: 1-44

**Remark on Protest**

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

## INTERNATIONAL SEARCH REPORT

Information on patent family members

PCT/AU2004/001093

This Annex lists the known "A" publication level patent family members relating to the patent documents cited in the above-mentioned international search report. The Australian Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

Patent Document Cited in Search Report				Patent Family Member			
EP	0957198	AU	28035/99	CA	2271900	ID	23328
		JP	11335989	NO	992021		
US	2003041982	NONE					
US	5385641	CA	2062474	EP	0508064	FI	920830
		NO	920828				
US	4652341	NONE					
WO	9011401	AU	54041/90	BR	9007254	CA	2049360
		EP	0465579	NO	913780	US	5032224
GB	2076034	NONE					
US	6139683	CA	2104765	DE	4228171	EP	0584675
		FI	933729	JP	6322682		
Due to data integration issues this family listing may not include 10 digit Australian applications filed since May 2001.							
END OF ANNEX							